



: 10/070,635
: March 1, 2002

AMENDMENTS TO THE CLAIMS

Please amend the Claims as follows. Insertions are shown underlined while deletions are ~~struck through~~.

1 (currently amended): A transfer device comprising:

a ~~carriage~~ plurality of carriages sharing the entirety of the weight of the transfer device, each carriage rotating along a ring-shaped fixed horizontal rail, said each carriage comprising an outer ring and an inner ring having a common vertical axis, and wheels rotatably fixed to and sandwiched between the outer ring and the inner ring, said wheels running on the rail and moving with respect to the rail together with the outer and inner rings;

vertical columns fixed rigidly to the inner ring of the carriage which ~~encloses~~ encircles the vertical columns, and extending vertically therefrom;

a table having a stroke capable of moving above and/or below the carriage, and lifting up and down along the vertical columns, said table being surrounded by the vertical columns;

a drivingly running mechanism incorporated into the carriage so that the carriage can be run; and

a drivingly lifting mechanism incorporated into the vertical columns or the table so that the table can be lifted up and down;

wherein the table is capable of moving above the top end of the vertical columns and/or below the bottom end of the vertical columns, and the object on the table is capable of being vertically and horizontally transferred by lifting up and down to a carry in-and-out floor; and

wherein each carriage is supported to the rail at a plural portions of the carriage, a plurality of the vertical columns is arranged within the rail along an inner periphery of the carriage, and a drivingly running mechanism incorporated into each carriage is capable of rotating the carriages along the respective rails and, by so doing, rotating integrally with the carriage the vertical columns and table.

2-3 (canceled)

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4 (currently amended): The transfer device according to claim 1, wherein the ~~carriage is referred to as a first carriage, and the rail is referred to as a first rail, said transfer device further comprising at least another carriage having the same configuration as the first carriage and at least another ring-shaped horizontal rail having the same configuration as the first rail,~~ wherein the horizontal rails of each carriage are vertically arranged in parallel at a predetermined interval, the vertical columns are connected rigidly to the carriages, and each horizontal rail is fixed to a floor where an object to be carried by the transfer device is placed or stored.

5-11 (canceled)

12 (previously presented): The transfer device according to claim 1, wherein the table has a size for accommodating one object.

13 (previously presented): A transfer device structure comprising an upper transfer device and a lower transfer device, each defined in claim 1, wherein between the upper and lower transfer devices, a carry in-and-out floor is provided for bring objects in or out of both the upper and lower transfer devices, wherein no vertical column crosses the floor, said table of the upper transfer device being configured to carry an object under the table, said table of the lower transfer device being configured to carry an object above the table.

14 (previously presented): The transfer device structure according to claim 13, wherein the upper transfer device ant the lower transfer device are vertically aligned.

15 (new): The transfer device according to claim 1, wherein the vertical columns extend vertically above the highest carriage and/or below the lowest carriage, and the vertical column and a drivingly lifting mechanism do not intersect a carry in-and-out floor, and

wherein the table vertically ascends above the top or below the bottom of the vertical columns, whereby the object can be loaded at the carry in-and-out floor

16 (new): The transfer device according to claim 1, wherein up-and-down both sides of an object carry in-and-out floor are provided with the carriage, the horizontal rail, the vertical column, and the table.